BTEC SCIENCE

Periodic table of the elements

1. Polonium and Radium





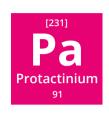
Marie Curie won two Nobel Prizes for her research on radioactivity and the discovery of polonium and radium in 1898.

2. Samarium and Gadolinium



a. In 1875, the American chemist Ellen Swallow Richards was analysing the mineral samarskite when she found an unidentifiable residue. That residue later turned out to consist of the two new elements: samarium and gadolinium.

3. Protactinium



a. Austrian-Swedish nuclear physicist Lise Meitner and her colleague Otto Hahn first proved the discovery of element 91, protactinium, in 1917-1918. During their research, she was forced to work in the basement because women were not supposed to be seen.

1.0 Hydrogen Key Alkaline N Ne B Be **Transition** Metal Non-metal Alkali metal earth metal metal Beryllium Nitrogen Lithium Carbon Oxygen Neon Boron Flourine 24.3 Metalloid **Actinide** Halogen Lanthanid Mg Ar Na Sulfur Argon **Phosphorus** Chlorine Magnesium Silicon Sodium Aluminum 11 Kr Fe Ca Se Ga Ge Copait inickei Coppei Zinc Krypton 36 131.3 126.9 85.5 Rb Sr Zr Nb Rh Pd Cd Sb Te Ag Xe Y Mo Tc Ru Sn In Rubidium Molybdenum **Palladium** Silver Indium **Tellurium** Niobium Technetium Ruthenium Rhodium Cadmium Antimony lodine Xenon Strontium Yttrium Zirconium 37 39 [222] 132.9 186.2 137.3 192.2 W Hg Pb Au Bi Ba Ta Re Pt Rn Os Ir At Cs Po 57-71* Radon Cesium **Barium** Hafnium **Tantalum** Tungsten Rhenium **Osmium** Iridium Platinum Gold Mercury Thallium Lead **Bismuth Polonium** Astatine 86 55 Rf Bh Fr 226 **Uus** UUo Db Hs Mt Sg Ra Ds Rg Uup Uut LV 89-103** Francium Radium Ununoctium Rutherfordium Dubnium Seaborgium Bohrium Ununtrium Flerovium Hassium Copernicium Gd Tb Er Ce Eu Ho Pr Sm Dy Tm Yb La Gadolinium Ytterbium Samarium Holmium Neodymium Europium Terbium **Erbium** Thulium Praseodymium Dysprosium Lanthanum Cerium Promethium Lutetium Th Cm Bk Es Md Ac Np Fm No Pu Pa Lr Cf Berkelium **Actinium** Uranium Neptunium **Plutonium** Curium Einsteinium awrencium

Did you know?

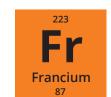
- > British radiochemist
 Frederick Soddy developed
 the idea that several
 elements could have the
 same atomic mass, which led
 to Scottish doctor Margaret
 Todd coining the term
 "isotope," meaning "same
 place" in Greek.
- Russian scientist Julia
 Lermontova worked on
 separating the platinumgroup metals (ruthenium,
 rhodium, palladium, osmium,
 iridium and platinum) as
 early as the 1870s.
- The letter "J" is the only one not found on the periodic table. In some countries (e.g., Norway, Poland, Sweden, Serbia, Croatia), the element iodine is known by the name jod. However, the periodic table still uses the IUPAC symbol I for the element.

4. Rhenium



In 1925, German couple Ida and Walter Noddack jointly discovered element 75, rhenium. The element, named after the Rhine River, is one of the rarest substances on earth.





a. In 1939, Marguerite Perey discovered francium on her own. This was the last naturally occurring element that could be extracted from minerals.

